

gree the heat of the 13th of July 1808, which was considered to be the highest on record in this country.

“On the relative dynamic value of the Degrees of the Compass; and on the Cause of the Needle resting in the Magnetic Meridian.” By Sir Graves C. Haughton, K.H., M.A., F.R.S., Foreign Associate of the Institute of France.

By ascertaining the distances at different azimuths at which a bar magnet placed with its axis directed to the centre of a magnetic compass needle caused the needle to assume the position in which its axis was in the same line with that of the magnet, the author found that these points of distance form a peculiar curve, which was nearest to the centre of the magnet at the east and west azimuths, and receded from it as it advanced to the north and south; and was twice the distance from it at the north than at the south azimuths. From this and other experiments he infers that the value of every degree of the compass is inversely as the square of the length of the ordinate or co-ordinate passing through it, the abscissa being considered as zero; and that the magnetic needle does not rest in the magnetic meridian in consequence of polar attraction, but is impelled in that direction by the effect of repulsion, from the east or west, and that its natural position is the result of an equilibrium between the eastern and western repulsions. On the other hand, the return of the needle, when it is placed in the reverse position, that is, when made to deviate 180° from its natural position, is the result of an attraction towards the east and west positions; the force of attraction in that case being quadruple the force of repulsion in the former case. He is consequently led to the conclusion that the operation of terrestrial magnetism is totally different from that of an artificial magnet, in which latter case the attractive and repulsive forces are exactly equal.

“Remarks on the Extractive Material of Urine, and on the Excretion of Sulphur and Phosphorus by the Kidneys in an unoxidized state.” By Edmund Ronalds, Ph.D., Giessen. Communicated by Golding Bird, M.D., F.R.S.

In the course of an experimental inquiry in which the author was engaged with a view to ascertain whether larger quantities of carbon were discharged by the kidneys in cases in which the functions of the lungs or liver were imperfectly performed, he was led to the result, that sulphur, not combined with oxygen in the form of sulphuric acid, existed in the urine to the amount of from three to five grains in the course of a day; and also that phosphorus, not in the state of phosphate, was in the same period excreted by the same channel, to the extent of nearly six grains.

“On some peculiarities of Fœtal Digestion.” By George Robinson, M.D. Communicated by William Bowman, Esq., F.R.S.

The author endeavours to show, contrary to the assertions of Dr. Robert Lee, that the human fœtus, in common with that of all the

higher animals, invariably contains, during the latter periods of intra-uterine life, albuminous or nutritious matter, which undergoes digestion in the small intestines. He finds that the nature of this substance varies very much in different animals. In the earlier periods of foetal life, the stomach contains very little, if any, nutritious matter. He is disposed to consider the salivary glands as the source of the albuminous matter found in the stomach at later periods.

“Extracts of Letters from Captain Williams, first Assistant to the Commissioner of Arracan, and from Ensign Haukeu and Mr. Howe, Marine Assistant Commissioner, giving details of a curious phenomenon seen at sea off Ryook Phyoo.” Communicated by Viscount Mahon, F.R.S., Pres. S.A.

The appearance in question, seen between five and six o'clock in the evening of the 2nd of December 1845, was that of a large flame far out at sea, flickering several times for fifteen and twenty minutes, and suddenly ceasing. It was conjectured to have been either a large ship on fire, or a volcanic eruption; but no positive data exist for determining the question.

“On the Fossil Remains of the soft parts of Foraminifera discovered in the Chalk and Flint of the South-east of England.” By Gideon Algonon Mantell, Esq., LL.D., F.R.S.

By subjecting small portions of calcareous rock to the action of diluted hydrochloric acid, the calcareous earth and the shells it had enveloped were removed; the residue consisting of particles of quartz and of green silicate of iron; and also numerous remains of the soft parts of animalcules, chiefly Xanthidia and Rotaliæ. The organization of the latter appears, from the observations of Ehrenberg, to be very simple, and to have no relation with the Cephalopoda, as was formerly imagined. The body is enclosed within the shell, which is polythalamous, and it occupies not only the outer chamber, but also all the cells contemporaneously, and the shell is pierced all over with minute pores, through which tentacula protrude; and there are also several soft transparent feelers, or *pseudopodia*, which are instruments of locomotion. When the shell is removed by acid, the soft body is exposed, and is seen to extend to the innermost chamber; and there is a connecting tube occupying the place of the siphuncle of the nautilus, but which is the intestinal canal; for the cells are the receptacles of the digestive sacs or stomachs, in which monads, naviculæ, and other minute infusoria, which the animal had swallowed, may sometimes be observed. In the fossil remains, the appearance of the parts which the author supposes to be the digestive organs, is that of a series of bladders or sacs, composed of a tough flexible integument, and connected by a tube. These organs are more or less filled with a dark substance; those which are distended are always well-defined, while the empty ones are collapsed and disposed in folds, just as membranous pouches would appear under similar conditions. The sacs regularly diminish in